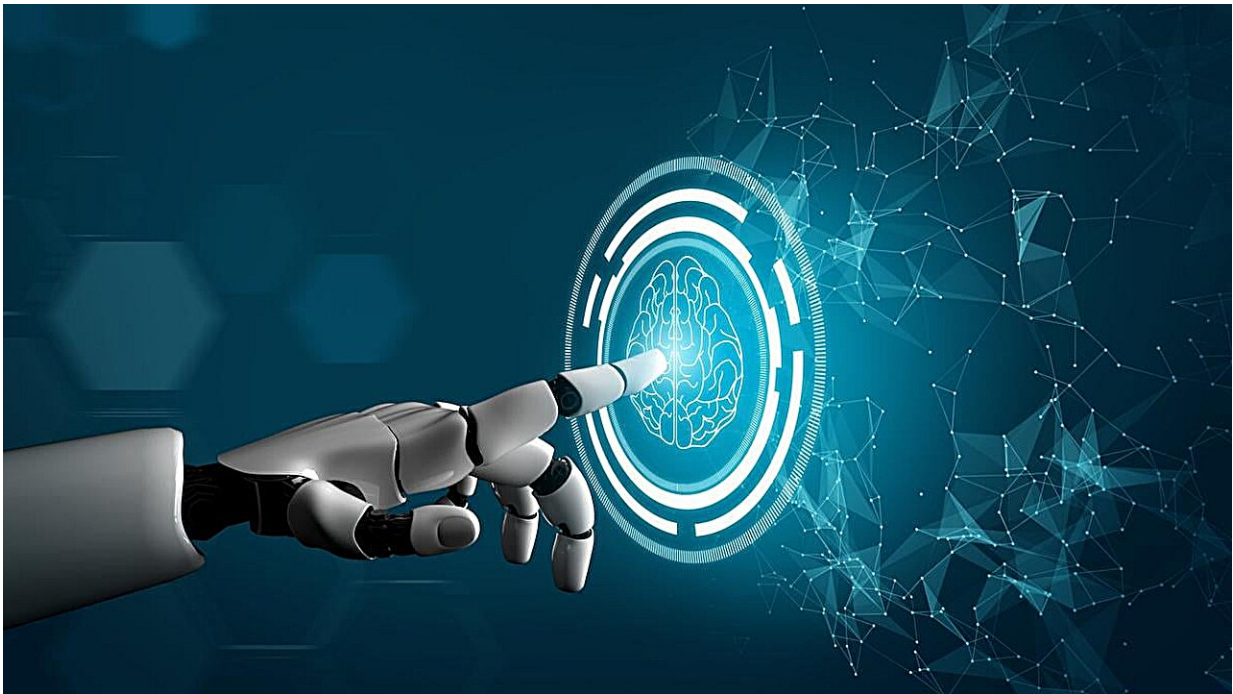


GPT-4 with vision has poor accuracy for image-based radiology questions

September 8 2024, by Elana Gotkine



The large language model GPT-4 with vision (GPT-4V) has high accuracy for text-only radiology questions, but much lower accuracy for image-based questions, according to a study published online Sept. 3 in *Radiology*.

Nolan Hayden, M.D., from Henry Ford Health in Detroit, and colleagues

examined the performance of GPT-4V on radiology in-training examination questions to gauge the model's baseline knowledge in radiology. The September 2023 release of GPT-4V was assessed using 386 retired questions (189 image-based and 197 text-based) from the American College of Radiology Diagnostic Radiology In-Training Examinations; 377 questions were unique.

The researchers found that GPT-4V answered 65.3 percent of the unique questions correctly, with significantly higher [accuracy](#) observed on the text-only versus the image-based questions (81.5 versus 47.8 percent). For text-based questions, differences were seen between prompts, with chain-of-thought prompting outperforming long instruction, basic prompting, and the original prompting style by 6.1, 6.8, and 8.9 percent, respectively. For image-based questions, there were no differences seen between prompts.

"We found that while GPT-4V shows relatively good performance on text-based questions, it shows deficits in accurately interpreting key radiologic images. This highlights the model's limitations in visual [radiology](#) analysis," the authors write. "We also noted an alarming tendency for GPT-4V to provide correct diagnoses based on incorrect image interpretations, which could have significant clinical implications."

More information: Nolan Hayden et al, Performance of GPT-4 with Vision on Text- and Image-based ACR Diagnostic Radiology In-Training Examination Questions, *Radiology* (2024). [DOI: 10.1148/radiol.240153](https://doi.org/10.1148/radiol.240153)

Francis Deng, Multimodal Models Are Still a Novice at Radiology Vision, *Radiology* (2024). [DOI: 10.1148/radiol.242286](https://doi.org/10.1148/radiol.242286)

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